

STAFF REPORT

LOCALIZED HEALTH IMPACTS REPORT

For Selected Projects Awarded Funding Through the
Alternative and Renewable Fuel and Vehicle Technology
Program Under Solicitation PON-13-605 – Centers for
Alternative Fuels and Advanced Vehicle Technologies



CALIFORNIA
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PREFACE

The increased use of alternative and renewable fuels supports California's commitment to curb greenhouse gas emissions (GHG), reduce petroleum use, improve air quality, and stimulate the sustainable production and use of alternative fuels within California. Alternative and renewable transportation fuels include electricity, natural gas, biomethane, propane, hydrogen, ethanol, renewable diesel, and biodiesel. State investment is needed to fill the gap and fund the differential cost of these emerging fuels and vehicle technologies.

Assembly Bill 118 (Núñez, Chapter 750, Statutes of 2007) created the Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP). This statute, amended by Assembly Bill 109 (Núñez, Chapter 313, Statutes of 2008), authorizes the California Energy Commission to "develop and deploy innovative technologies that transform California's fuel and vehicle types to help attain the state's climate change policies."

The statute also directs the California Air Resources Board to develop guidelines to ensure air quality improvements. The California Air Resources Board Air Quality Improvement Program (AQIP) Guidelines, approved in 2008, are published in the *California Code of Regulations, Title 13, Motor Vehicles, Chapter 8.1, AB 118 Air Quality Guidelines for the Alternative and Renewable Fuel and Vehicle Technology Program and the AQIP*. The *AQIP Guidelines* require the Energy Commission, as the funding agency, to analyze the localized health impacts of ARFVTP-funded projects that require a permit (13 CCR § 2343).

ABSTRACT

This *Localized Health Impacts Report* reviews the project proposals under consideration for funding that were submitted in response to the Centers for Alternative Fuels and Advanced Vehicle Technologies solicitation, PON-13-605, by the Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP). This *Localized Health Impacts Report* contains project and site descriptions (including geographic locations), and potential impacts as contained in the proposals.

This *Localized Health Impacts Report* analyzes the aggregated locations of projects, the impacts in communities with the most significant exposure to air contaminants or localized air contaminants, or both, including but not limited to, communities of minority populations or low-income populations, as declared by the project proposers or also as determined by Energy Commission staff. This report identifies outreach to community groups and other affected stakeholders, also as declared by the project proposers.

Keywords: air pollution, air quality, air quality improvement program (AQIP), Air Resources Board, alternative fuel, Assembly Bill (AB) 118, assessment, California Environmental Quality Act, centers, criteria emissions, demographic, Energy Commission, environmental justice (EJ), Environmental Justice Screening Method (EJSM), greenhouse gas emissions (GHG), localized health impact (LHI), unified school district (USD)

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CHAPTER 1:

Projects Proposed for Funding

This chapter summarizes the projects proposed for Energy Commission Funding. The projects in this *LHI Report* are the following:

- Southern California Alternative Fuel and Advanced Vehicle Technology Center (Economic Development Corporation of Los Angeles County).
 - 9325 Sky Park Court, #100, San Diego, CA 92123
 - 411 S Hewitt Street, Los Angeles, CA 90013
- Northern California Center for Alternative Transportation Fuels and Advanced Vehicle Technologies (The Regents of the University of California, Berkeley campus).
 - 1301 S. 46th St., Richmond, CA 94804
 - 1 Harpst St., Arcata, CA 95521
 - 1608 Las Plumas Ave., San Jose, CA 95133
 - 3300 Industrial Blvd., Suite 1000, West Sacramento, CA 95691

CHAPTER 2: Approach, Definitions, and Projects Proposed for Funding

The California Energy Commission, through the Alternative and Renewable Fuels and Vehicle Technology Program (ARFVTP), released a competitive grant solicitation and application package on August 23, 2013. The application due date was November 14, 2013. Grant Solicitation PON-13-605 sought to fund projects that will develop, construct, expand, rent/lease, and/or operate a center serving multiple functions.

The projects assessed in this report include centers in Northern and Southern California that will help unify activities that may provide future development and expansion of alternative fuels and advanced vehicle technologies through collaboration with existing and new centers throughout the state. In the course of normal operations, none of these facilities generate criteria emissions, particulate matter (PM), or air toxics at any appreciable level. The proposed centers will be located at existing facilities with minor modifications of the facilities; therefore, the projects will most likely not have any effects on the local environment.

The Energy Commission is required to analyze and publish the *LHI Report* for public review and comment for a period of 30-days. Based on the Energy Commission's interpretation of the Air Quality Improvement Program (AQIP) Guidelines, the *LHI Report* provides information about the communities surrounding the potential project sites and assesses the potential impacts to public health in those communities as a result of the project. The *LHI Report* is prepared under the *California Air Resources Board AQIP Guidelines, California Code of Regulations, Title 13, Motor Vehicles, Chapter 8.1 (CCR § 2343)*:

“(6) Localized health impacts must be considered when selecting projects for funding. The funding agency must consider environmental justice consistent with state law and complete the following:

(A) For each fiscal year, the funding agency must publish a staff report for review and comment by the public at least 30 calendar days prior to approval of projects. The report must analyze the aggregate locations of the funded projects, analyze the impacts in communities with the most significant exposure to air contaminants or localized air contaminants, or both, including, but not limited to, communities of minority populations or low-income populations, and identify agency outreach to community groups and other affected stakeholders.

(B) Projects must be selected and approved for funding in a publicly noticed meeting.”

The *LHI Report* is not intended to be a detailed environmental health or impact analysis of projects potentially to be funded by the program nor is this assessment intended to be a substitute for the comprehensive environmental review conducted by regulatory agencies during the California Environmental Quality Act (CEQA) process. The application of CEQA would provide a more detailed analysis of the potential for adverse environmental effects of the proposed projects.

The report collects available information about the potential air quality impacts of the proposed projects and provides a collective, narrative analysis of the potential for localized health effects from those projects. The AQIP Guidelines mandate that the Energy Commission track the projects' progress through the CEQA process and ensure a commitment exists from the proposers to complete all mitigation measures required by the permitting agency before they receive the first funding allocation.

Staff reviewed results from the Environmental Justice Screening Method (EJSM) to identify projects located in areas with social vulnerability indicators and the greatest exposure to air pollution and associated health risks.¹ The EJSM was developed to identify low-income communities highly affected by air pollution for assessing the impacts of climate change regulations, specifically Assembly Bill 32 (Núñez/Pavley, Chapter 488, Statutes of 2006), the California Global Warming Solutions Act of 2006.

The EJSM identifies the various levels of risk in regions throughout California, and high-risk communities are considered especially vulnerable to even the smallest impacts. The EJSM integrates data on exposure to air pollution, cancer risk, ozone concentration and frequency of high ozone days, race/ethnicity, poverty level, home ownership, median household value, educational attainment, and sensitive populations (populations under 5 years of age, or over 65 years of age).

The California Air Resources Board applied the method to the San Francisco Bay Area, San Joaquin Valley, and California's desert region. However, the results consider only income among the list of social vulnerability indicators. For communities not yet assessed in the EJSM, the Energy Commission identifies high-risk areas as those in nonattainment basins for ozone, particle pollution, or particulate matter (PM) 2.5 and PM 10, along with populations that have high poverty and minority rates as well as a high percentage of sensitive populations.

The *LHI Report* contains detailed assessments for projects proposed to be located in a low-income community that is highly impacted by air pollution. The reasons the *LHI Report* contains detailed assessment for these communities is that the populations within these communities are

1 California Air Resources Board, *Air Pollution and Environmental Justice, Integrating Indicators of Cumulative Impact and Socio-Economic Vulnerability Into Regulatory Decision-Making*, 2010. (Sacramento, California) Contract authors: Manuel Pastor Jr., Ph.D., Rachel Morello-Frosch, Ph.D., and James Sadd, Ph.D.

presumed to be most susceptible to health risks because of their exposure to criteria and toxic air pollutants on a more continual basis as compared with other geographic regions.

Permits

For this assessment, the Energy Commission interprets “permits” to connote discretionary and conditional use permits because they require a review of potential impacts to a community and the environment before issuance. For air permits, local air districts conduct a New Source Review (NSR) to determine the emission impacts. Since ministerial-level permits, such as building permits, do not assess public health-related pollutants, the Energy Commission staff does not assess projects requiring only ministerial level permits in this report. An overview of the permit requirements for identified projects potentially to be located in at risk communities is included in the project overviews in the *LHI Report*.

Incremental increases in criteria emissions must be reduced or mitigated through a pollution control standard known as Best Available Control Technologies (BACT), and possibly, Emission Reduction Credits (ERC) which are granted upon request by an emission source.² An NSR determines if a modification to an existing station or construction of a new station will result in significant increased air emissions within a given region, and this report contains the related information as given by the project proposers. Immediate action must be taken by the appropriate party for any toxics released that exceed predetermined thresholds before a facility is reconsidered for a permit.

Demographic Data

Staff collected information on ethnicity, age, and income for the city/community where the potential project, if funded, would be located. The information identifies those communities with higher minority populations, lower incomes, and highly sensitive groups based on age. For this assessment, staff identifies sensitive populations as individuals younger than 5 years of age and older than 65 years of age. The demographic data for the proposed project sites is provided.

Emissions

Staff collected information about predicted emissions from the project proposals. The emissions considered for this assessment include those from developing and/or expanding centers for alternative fuels and advanced vehicle technologies.

² California Air Resources Board, *Air Quality Guidance for Siting Biorefineries in California*, 2012 (Sacramento, California) <http://www.arb.ca.gov/fuels/lcfs/bioguidance/bioguidance.htm>

Community Status of Proposed Projects

The following community status descriptions for the proposed projects are based on the ARB *Proposed Screening Method*, which integrates data to identify low-income communities that are highly impacted by air pollution.³ The California State Implementation Plans (<http://www.arb.ca.gov/planning/sip/sip.htm>) are used as a source for public notices for attainment plans. The *Green Book Nonattainment Areas for Criteria Pollutants* (<http://www.epa.gov/oaqps001/greenbk>) is also used as an information source for this assessment.

Economic Development Corporation of Los Angeles County

Project Name

Southern California Alternative Fuel and Advanced Vehicle Technology Center

Economic Development Corporation of Los Angeles County proposes to develop the Southern California Alternative Fuel and Advanced Vehicle Technology Center with two physical and one virtual locations, which will facilitate regional coordination on alternative fuel and advanced vehicle technology in workforce development and planning and provide a central location for companies, researchers, and public agencies to collaborate on alternative fuels, technology development, intellectual property protection, prototyping, and technological needs.

The physical Centers will be housed in the following existing buildings:

- California Center for Sustainable Energy, 9325 Sky Park Court, #100, San Diego, CA 92123
 - no school, one child care facility, and five health care facilities within a 1-mile radius, in the industrial zoning district
- Los Angeles Cleantech Incubator, 411 S Hewitt Street, Los Angeles, CA 90013
 - four schools, eleven child care facilities, nine health care facilities within a 1-mile radius, in the heavy industrial zoning district.

Outreach Efforts

Outreach will be conducted through meetings, events, and programs that will be made available online and distributed through project partners, via social media and through the Center's email communication.

The Regents of the University of California, Berkeley campus

Project Name

Northern California Center for Alternative Transportation Fuels and Advanced Vehicle Technologies

³ California Air Resources Board (ARB), *Proposed Screening Method for Low-Income Communities Highly Impacted by Air Pollution*, 2010 (Sacramento, California).

The Regents of the University of California, Berkeley campus, proposes to develop the Northern California Center for Alternative Transportation Fuels and Advanced Vehicle Technologies, which will provide a physical and advanced web/internet-networked location for education, training, demonstration, and full-scale deployment of alternative transportation fuels and advanced vehicle technologies in the Northern California region. The center will bring together a cutting-edge team of leading organizations spanning the Northern California region with a wide coverage of advanced vehicle and alternative fuel training, outreach, and project development programs.

The proposed project work will occur at existing facilities located at:

- UC Berkeley / Lawrence Berkeley National Laboratory – Richmond Field Station: 1301 S. 46th St., Richmond, CA 94804
 - six schools, two child care facilities, and no health care facilities within a 1-mile radius, in the light industrial zoning district
- Humboldt State University : 1 Harpst St., Arcata, CA 95521
 - eight schools, five child care facilities, and three health care facilities within a 1-mile radius, in the public facility zoning district
- Prospect Silicon Valley: 1608 Las Plumas Ave., San Jose, CA 95133
 - two schools, four child care facilities, and one health care facility within a 1-mile radius, in the light industrial zoning district
- California Fuel Cell Partnership: 3300 Industrial Blvd., Suite 1000, West Sacramento, CA 95691
 - no school, no child care facilities, and three health care facilities within a 1-mile radius, in the business park zoning district.

Minor site work involving adding display kiosks, exhibit capability, additional outdoor signage capability, pouring a small concrete pad and running electrical conduit and wiring for future vehicle test beds, classroom/meeting room improvements, and audio/visual and IT capability improvements will have minimal, if any, additional emissions.

Outreach Efforts

Outreach will be conducted through general notices of development for the center.

Chapter 3:

Location Analysis and Community Impacts

Based on the staff's assessment of the proposed projects, it is expected that five of the six surrounding communities have populations that are presumed to be most susceptible to health risks because of their exposure to criteria and toxic air pollutants on a more continual basis as compared with other geographic regions. For the *LHI Report*, environmental justice (EJ) indicators are evaluated as follows.

- A minority EJ is indicated if a minority subset represents more than 30 percent of a given city's population.
- A poverty level EJ is indicated if a city's poverty level exceeds the state of California's poverty level (for the entire state – 15.3 percent).
- An unemployment EJ is indicated if a given city's unemployment rate exceeds the state of California's unemployment rate (for the entire state – 8.0 percent as of February 2014).
- An EJ indicator is also noted for communities where the percentage of persons younger than 5 years of age or older than 65 years of age is 20 percent higher than the average of the percentage of persons under 5 years of age or over 65 years of age for the entire state. (For the entire state, the percentage of persons under the age of 5 years is 6.7 percent, and the percentage of persons over the age of 65 years is 12.1 percent.)

Of the six proposed sites, four sites have minority EJ indicators. The poverty EJ indicator exists in four locations for the planned sites and three sites have unemployment EJ indicators. The age EJ indicator does not exist in any proposed sites. The proposed projects are expected to have a net benefit by reducing emissions and leading to improved air quality. While overall air quality depends on a number of factors, the Energy Commission expects that air quality will improve over time where the sites are proposed. Appendix A of this *LHI Report* covers the communities with EJ indicators which are described as minority EJ, poverty level EJ, and unemployment EJs.

Staff identifies high-risk communities using the following factors: (1) those located in nonattainment air basins for ozone, PM 10 and PM 2.5; (2) those with high poverty, minority population, and/or unemployment rates; and (3) those with a high percentage of sensitive populations (under 5 years of age and over 65 years of age). Those designated as high-risk communities would be located in nonattainment air basins and have one or more of the other two factors.

CHAPTER 4:

Summary

If funded, the proposed projects would result in six different physical sites and two virtual sites for developing and/or expanding centers for alternative fuels and advanced vehicle technologies. Appendix A lists the communities in which the sites are proposed to be located. The sites will increase the widespread use of alternative fuel vehicles through education, demonstration, testing, and outreach. As more alternative fuel vehicles enter the market and begin to displace gasoline and diesel vehicles, tailpipe pollutants will decrease significantly.

The anticipated impacts to the communities where these projects would be located are positive in terms of cleaner air and anticipated GHG reductions.

Of the six different communities listed in Appendix A (with projects proposed for six different sites), one has no EJ indicators, two have one EJ indicator, none has two indicators, three have three indicators, and none has four EJ indicators. The anticipated benefit from these projects for the people who live in these communities is highly likely, if not certain, to be positive. More demographics for the communities are contained in Appendix B. Appendix B contains information on persons below the poverty level, black persons, American Indian and Alaska Native, persons of Hispanic or Latino origin, white persons and persons under 5 years of age and over 65 years of age. The unemployment rates for the various communities are also given in Appendix B.

Of the six sites, five sites (Richmond, San Jose, West Sacramento, San Diego, and Los Angeles) would be in nonattainment zones for ozone and/or PM 2.5, and, according to the EJSM, would be located in high-risk communities.

Table 1: Proposed Sites with EJ Indicators

	6 Different Sites	Percent
No EJ Indicators	1	17%
One EJ Indicator	2	33%
Two EJ Indicators	0	0%
Three EJ Indicators	3	50%
Four EJ Indicators	0	0%
	Total	100%

CHAPTER 5:

Acronyms

AQIP	Air Quality Improvement Program
ARFVTP	Alternative and Renewable Fuel and Vehicle Technology Program
CEQA	California Environmental Quality Act
EJ	Environmental justice
EJSM	Environmental justice screening method
GHG	Greenhouse gas
LHI	Localized health impact
PM	Particulate matter
PON	Program Opportunity Notice

APPENDIX A:

Communities With EJ Indicators

Table A-1: Communities with EJ Indicators

Proposals	Community	Minority	Poverty Level	Unemployment Rate
1	Richmond	X	X	X
1	Arcata			
1	San Jose	X		
1	West Sacramento	X	X	X
1	San Diego		X	
1	Los Angeles	X	X	X

Source: Energy Commission staff analysis

APPENDIX B: Demographic Data

Table B-1: Demographic Data for Communities with EJ Indicators (percent)

2010 Data	Persons Below Poverty Level	Black persons	American Indian and Alaska Native	Persons of Hispanic or Latino Origin	White persons	Persons under 5 years of age	Persons over 65 years of age	Unemploy- ment rate
San Diego Population: 1,307,402	15.4	6.7	0.6	28.8	45.1	6.2	10.7	6.9
Los Angeles Population: 3,792,621	21.2	9.6	0.7	48.5	28.7	6.6	10.5	9.8
Richmond Population: 103,701	17.9	26.6	0.6	39.5	17.1	7.4	10.2	11.5
Arcata Population: 56,364	9.9	1.2	0.3	12.1	25.7	4.3	16.3	8.0
San Jose Population: 945,942	11.7	3.2	0.9	33.2	28.7	7.3	10.1	6.8
West Sacramento Population: 48,744	18.8	4.8	1.6	31.4	47.4	8.4	9.8	16

Sources: Unemployment information from the State of California, Employee Development Department (EDD) Labor Market Information Division: <http://www.labormarketinfo.edd.ca.gov/Content.asp?pageid=133> and [Age / ethnicity demographics, U.S. Department of Census: http://quickfacts.census.gov](http://quickfacts.census.gov).